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Vekua integral operators on Riemann surfaces

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Abstract

On an arbitrary (in general, noncompact) Riemann surface R, we study integral operators T and II analogous to the operators introduced by Vekua in his theory of generalized analytic functions. By way of application, we obtain necessary and sufficient conditions for the solvability of the nonhomogeneous Cauchy-Riemann equation ∂f = F in the class of functions f exhibiting Λ 0-behavior in the vicinity of the ideal boundary of the surface R. ©2001 Plenum Publishing Corporation.

Keywords

Abelian differential, Behavior space, Cauchy-Riemann equations, Generalized analytic function, Ideal boundary, Riemann surface